Manufacturer: National Instruments

Board Assembly Part Numbers (Refer to Procedure 1 for identification procedure):

Part Number and Revision	Description
157565B-02L or later	cDAQ-9133 Windows
157565B-12L or later	cDAQ-9135 Windows

Volatile Memory

Target Data	Type	Size	Battery Backup	User[1] Accessible	System Accessible	Sanitization Procedure
System memory	DDR3L-SDRAM	2 GB	No	Yes	Yes	Cycle Power
Real-time clock data	SoC RTC RAM	242 B	Yes	Yes	Yes	Procedure 2

Non-Volatile Memory (*incl. Media Storage*)

Target Data	Type	Size	Battery Backup	User Accessible	System Accessible	Sanitization Procedure
Operating system	Flash	16 GB	No	Yes	Yes	Procedure 3
BIOS firmware	Flash	8 MB	No	No	Yes	Procedure 4
DDR3L memory	SPD EEPROM	256 B	No	No	Yes	None
General logic	CPLD	Lattice LCMXO2-4000HC	No	No	Yes	None
Ethernet firmware	Flash	1 MB	No	No	Yes	None
Controller firmware	Flash	1 MB	No	No	Yes	None

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[1] Refer to *Terms and Definitions* section for clarification of *User* and *System Accessible*

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Procedures

Procedure 1 –Board Assembly Part Number Identification:

To determine the Board Assembly Part Number and Revision, check the top left corner of the white label on the bottom of the module. The Assembly Part Number should be formatted as "P/N: 1575651b-02L" for the cDAQ-9133 or "P/N: 157565b-12L" for the cDAQ-9135 where "b" is the letter revision of the assembly (e.g. C, D, E…).

Procedure 2 - CMOS Reset:

To optimize boot time system specific information and BIOS settings are saved to memory backed up by a CMOS battery. Complete the following steps to restore this information to factory default values:

1. Disconnect power from the device.
2. Press and hold the CMOS reset button for 1 second or longer. On 8-slot chassis, this button is located between slots 4 and 5. On 4-slot chassis, this button is located between slots 2 and 3.
3. Reconnect power to the device. The *BIOS Reset Detected* warning message will appear onscreen to indicate a successful reset.

Procedure 3 - Format Disk with Recovery Media (Windows):

For a Windows target, the operating system can be restored from the *NI cDAQ-9132/9133/9134/9135/9136/9137 Controller OEM Re-Installation* media shipped with the controller. Restoring the operating system erases the contents of the hard drive, including user data. To use the recovery media, complete the following steps:

1. Connect an external DVD drive through a USB hub to one of the USB ports of the cDAQ controller and insert the recovery media.
2. Connect a keyboard to the other USB port on the cDAQ controller. Connect the mouse to the USB hub.
3. Power on the cDAQ controller.
4. Press the <F10> key on the keyboard.
5. Select the DVD drive or recovery media.
6. Press any key to boot from the recovery media.
7. In the Windows Recovery Configuration, select your language and the hard drive configuration for Windows Embedded Standard 7 (WES7) SP1 installation.

Procedure 4 - Restore BIOS to factory default:

The controller's BIOS firmware can be restored to factory default settings with the BIOS Setup Utility. Complete the following steps to access this utility:

1. Connect a video monitor to the mini DisplayPort connector on the cDAQ controller.
2. Connect a USB keyboard to one of the USB host ports on the cDAQ controller.
3. Power on or reboot the cDAQ controller.
4. Hold down either the <F10> key or the <Del> key until the message *Please select boot device:* appears onscreen.
5. Use the Down Arrow key to select *Enter Setup* and press <Enter>. The setup utility loads after a short delay.
6. Navigate to the *Save & Exit* Menu and select *Restore Factory Defaults*.

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Terms and Definitions

Cycle Power:

The process of completely removing power from the device and its components and allowing for adequate discharge. This process includes a complete shutdown of the PC and/or chassis containing the device; a reboot is not sufficient for the completion of this process.

Volatile Memory:

Requires power to maintain the stored information. When power is removed from this memory, its contents are lost. This type of memory typically contains application specific data such as capture waveforms.

Non-Volatile Memory:

Power is not required to maintain the stored information. Device retains its contents when power is removed. This type of memory typically contains information necessary to boot, configure, or calibrate the product or may include device power up states.

User Accessible:

The component is read and/or write addressable such that a user can store arbitrary information to the component from the host using a publicly distributed NI tool, such as a Driver API, the System Configuration API, or MAX.

System Accessible:

The component is read and/or write addressable from the host without the need to physically alter the product.

Clearing:

Per *NIST Special Publication 800-88 Revision 1*, "clearing" is a logical technique to sanitize data in all User Accessible storage locations for protection against simple non-invasive data recovery techniques using the same interface available to the user; typically applied through the standard read and write commands to the storage device.

Sanitization:

Per *NIST Special Publication 800-88 Revision 1*, "sanitization" is a process to render access to "Target Data" on the media infeasible for a given level of effort. In this document, clearing is the degree of sanitization described.

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